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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/601,886	10/27/2000	Kazuo Tsubouchi	SUGI:091	3777

7590 11/19/2003

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EXAMINER
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SHOU, HENRY K

ART UNIT	PAPER NUMBER
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2664

DATE MAILED: 11/19/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/601,886

Applicant(s)

TSUBOUCHI ET AL.

Examiner

Henry K Shou

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-15 is/are allowed.
- 6) ☒ Claim(s) 1,6-8,16-18 and 23-26 is/are rejected.
- 7) ☒ Claim(s) 2-5, 19-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1 The disclosure is objected to because of the following informalities: The name of proposed invention *Code Division Multiple Communication System* used in the whole application from place to place is not conformed to the naming convention commonly used in the industry which is *Code Division Multiple Access Communication System*. Appropriate corrections are required.

### *Claim Objections*

2 Claims 1-26 are objected to because of the same informalities as mentioned in the section *Specification*. Appropriate corrections are required.

In claim 7 the phrase *in any one of claim 16* (see lines 1-2) is an obvious typo error. This phrase should be corrected to *in claim 16*.

In claim 24 the word *23* (see line 2) is an obvious typo error. It should be corrected to *claim 23*.

In claim 25 the number *16* (see line 3) is an obvious typo error. It should be corrected to *64*.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3 Claims 1, 6-8, 16-18 and 23-26 are rejected under 35 U.S.C. 102(e)(2) as being anticipated by Tsubouchi et al. (U.S. Pat. 6,061,342), hereinafter referred to as Tsubouchi.

In regard to claim 1, Tsubouchi discloses a code division multiple access communication system in which in a transmitter (Fig. 2 and **transmission apparatus**, column 2 and line 57), a code division multiple signal (Fig. 3A), composed of a data division (**Data Packet** part of Fig. 3A) obtained by multiplying (**multiplying**, column 3, line 52) a baseband data (**baseband data**, column 3, line 21) and an orthogonal code (**orthogonal PN code**, column 3, lines 42-43) and a preamble division (combination of synchronization packet and dummy data in Fig. 3A) including synchronization code sequences (**synchronization packet** in Fig. 3A ) to attain the chip synchronization (**bit synchronization**, column 4, line 42) of the orthogonal code in a receiver (Fig. 1 and **receiving apparatus**, column 2 and line 54), is modulated (see function described in column 3, lines 56-58) with a carrier (**carrier**, column 3, line 56) having a given center frequency (**carry frequency**, column 5, line 13) and transmitted, and in the receiver, a correlation peak (**correlation peak**, column 4, lines 52-53) is detected (**detected**, column 4, line 53) from among the synchronization code sequences (**synchronization packet**) in the preamble division by a surface acoustic wave matched filter (**SAW**, column 4, line 53) and the baseband data (**baseband data**, column 5, line 23) in the data division is demodulated (**demodulated**, column 5, line 22) by the orthogonal code (**orthogonal PN code**, column 5, lines 21-22) generated on the detection timing (**timing**, column 4, line 41), wherein the preamble division has

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plural synchronization code sequences (**11-bit Barker code**, column 3, line 36), and the surface acoustic wave matched filter (**SAW**) detects the correlation peak of at least one (see **envelope detection** circuit 15, column 4, lines 45-47) from among the plural synchronization code sequences and generates the orthogonal code on the detection timing (Fig. 5B) of the correlation peak.

In regard to claims 6-7 and 23-24, the feature that the chip rate of the synchronization code sequence in the preamble division is higher than, or not less than two as high as, the chip rate of the orthogonal code in the data division is already well known in the prior arts that are conformed to the industrial standards such as IS-95. The commonly used 11-chip Barker code and 64-chip orthogonal PN code packet is a trivial example. The main reason to set the ratio of the synchronization code sequence to the chip rate of the orthogonal code to an integral number is obviously just for designing and fabricating the circuits much easier.

In regard to claims 8 and 25, the subject matter **64 chips** for the chip length of the orthogonal code in the data division is already well known in the prior art such as IS-95 CDMA standard.

In regard to claim 16, Tsubouchi discloses a code division multiple access communication system in which in a transmitter (Fig. 2 and **transmission apparatus**, column 2 and line 57), a code division multiple signal (Fig. 3A), composed of a data division (**Data Packet** part of Fig. 3A) obtained by multiplying (**multiplying**, column 3, line 52) a baseband data (**baseband data**,

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column 3, line 21) and an orthogonal code (**orthogonal PN code**, column 3, lines 42-43) and a preamble division (combination of synchronization packet and dummy data in Fig. 3A) including synchronization code sequences (**synchronization packet** in Fig. 3A ) to attain the chip synchronization (**bit synchronization**, column 4, line 42) of the orthogonal code in a receiver (Fig. 1 and **receiving apparatus**, column 2 and line 54), is modulated (see function described in column 3, lines 56-58) with a carrier (**carrier**, column 3, line 56) having a given center frequency (**carry frequency**, column 5, line 13) and transmitted, and in the receiver, a correlation peak (**correlation peak**, column 4, lines 52-53) is detected (**detected**, column 4, line 53) from among the synchronization code sequences (**synchronization packet**) in the preamble division by a surface acoustic wave matched filter (**SAW**, column 4, line 53) and the baseband data (**baseband data**, column 5, line 23) in the data division is demodulated (**demodulated**, column 5, line 22) by the orthogonal code (**orthogonal PN code**, column 5, lines 21-22) generated on the detection timing (**timing**, column 4, line 41), wherein in the receiver, the orthogonal code (**orthogonal PN code**) which is generated on the detection timing (**timing**) of the correlation peak (**correlation peak**) in the surface acoustic wave matched filter (**SAW**) is multiplied (**Multiplier**, column 5, line 17) by the received code division multiple signal (**signal**, column 5, line 18) to generate a narrow-band modulation signal (output of **Multiplier 22**, column 5, line 19) and the generated narrow-band modulation signal is demodulated (**demodulated**, column 5, line 22) by a carrier (**carrier**, column 5, line 14) generated from a local oscillator (**Carrier Generator 23**, column 5, line 15) provided in the receiver to reproduce the original baseband data (**original baseband data**, column 5, line 23).

In regard to claims 17 and 18, Tsubouchi discloses a local oscillator (**Carrier Generator 23**) provided in the receiver generates the carrier (**carrier**) having the frequency equal to (in-phase) or different (out of phase, i.e. 90°, 180° or 270°) center frequency (in-phase **carrier**) or of the carrier generated in the transmitter (**transmission apparatus**), and the generated carrier (**carrier**, column 5, line 14) from the local oscillator is multiplied (**Multiplier**, column 5, line 17) by the narrow-band modulation signal (output of **Multiplier 22**, column 5, line 19) to demodulate to the original baseband data (**original baseband data**).

In regard to claim 26, Tsubouchi discloses the surface acoustic wave matched filter has an aluminum nitride film (**aluminum nitride film**, column 4, line 9) as its component.

#### *Claims Allowable*

4      Claims 9-15 are allowable.

5      Claims 2-5 and 19-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Conclusion*

6      The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Uchida et al.** (US Patent No 6,366,603), Spread Spectrum Communication System

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**Shinohara et al.** (US Patent No 6,160,838), Spread Spectrum Transmitter, Spread Spectrum Receiver, And Spread Spectrum Communication Method And Automatic Gain Control Circuit for Spread Spectrum Receiver

**Tanaka et al.** (US Patent No 6,275,123), Surface Acoustic Wave Matched Filter with Dispersive Substrate And SAW Group Velocity Based Output Electrode Design

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry K Shou whose telephone number is (703) 305-7457. The examiner can normally be reached on weekdays 7 AM – 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (703) 305-4798. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

HKS  
November 13, 2003

  
RICKY NGO  
PRIMARY EXAMINER